

Close doublet structures in ^{103}Mo , $^{109,111}\text{Ru}$, and neighbours: rotation alignment for the half-filled $\text{h}_{11/2}$ subshell?*

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Several new gamma transitions are assigned to ^{103}Mo and $^{109,111}\text{Ru}$ in a gamma-gamma-gamma coincidence study from the spontaneous fission of ^{252}Cf with 72 Compton suppressed Ge detectors in Gammasphere. A close doublet structure of an odd-parity band except near its bandhead is a common feature not only of the nuclei studied here but of many others with $61 \leq N \leq 67$. This doublet structure may be a general consequence of rotation alignment for configurations of half-filled j -shells, which are only weakly coupled to the deformed shapes.

Footnotes and References

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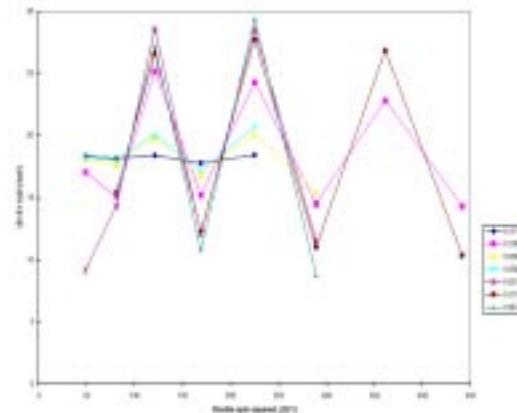


Fig. 1 Plot of rotational constant in odd-Z even-parity bands ($g9/2$). Note the large increase of signature splitting with increasing mass number.